ABSTRACT OF THE DISCLOSURE

A regeneration process is disclosed for an etching solution composed of a phosphoric acid solution and used in etching silicon nitride films in an etch bath. As a result of the etching, the etching solution contains a silicon compound. According to the regeneration process, the etching solution with a silicon compound contained therein is taken out of the etch bath. Water is then added to the taken-out etching solution to lower a concentration of phosphoric acid in the etching solution to 80 to 50 wt.%. By the lowing of the concentration of phosphoric acid, the silicon compound is caused to precipitate. The thus-precipitated silicon compound is removed from the etching solution. An etching process making use of the regeneration process and an etching system suitable for use in practicing the regeneration process and etching process are also disclosed.